



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,614	04/21/2006	Naoki Takahashi	062427	4330

38834 7590 12/16/2009
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

RUDE, TIMOTHY L

ART UNIT	PAPER NUMBER
----------	--------------

2871

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

12/16/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

DETAILED ACTION

Claims

Claims 1-3, 20, 21, and 25-28 are amended. Please note: Applicant has added additional performance limitations to the device claims and has eliminated certain means plus function language which removes Applicant's ability to rely on 35 U.S.C. 112 6th paragraph. These changes leave the claims in a condition where the bulk of the limitations are performance limitations which lack structural basis, such that the claims are now considered indefinite.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 and 24-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has insufficient limitations as to device structure that would result in Applicant's claimed performance. Applicant must claim a device mainly by way of structure, especially when not relying on 35 U.S.C. 112 6th paragraph.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

Art Unit: 2871

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-21 and 24-31 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Device structure and structural relationships critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Applicant may not merely claim a well know structural combination along with remarkable performance; Applicant must claim the structure, in particular, that provides said remarkable performance, such that an alternate device having the claimed structure and structural relationships would necessarily have the claimed remarkable performance, consistent with Applicant's enabling disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-21 and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowley et al [Bowley] USPGPUB 2003/0063245 in view of Winker et al [Winker] USPAT 6,710,831.

As to claim 1, Bowley discloses [entire patent, especially [0097] and Figure 4] an optical element comprising: a polarizing element (A) [408], separating incident light into polarization to then emit light, and made of a cholesteric liquid crystal.

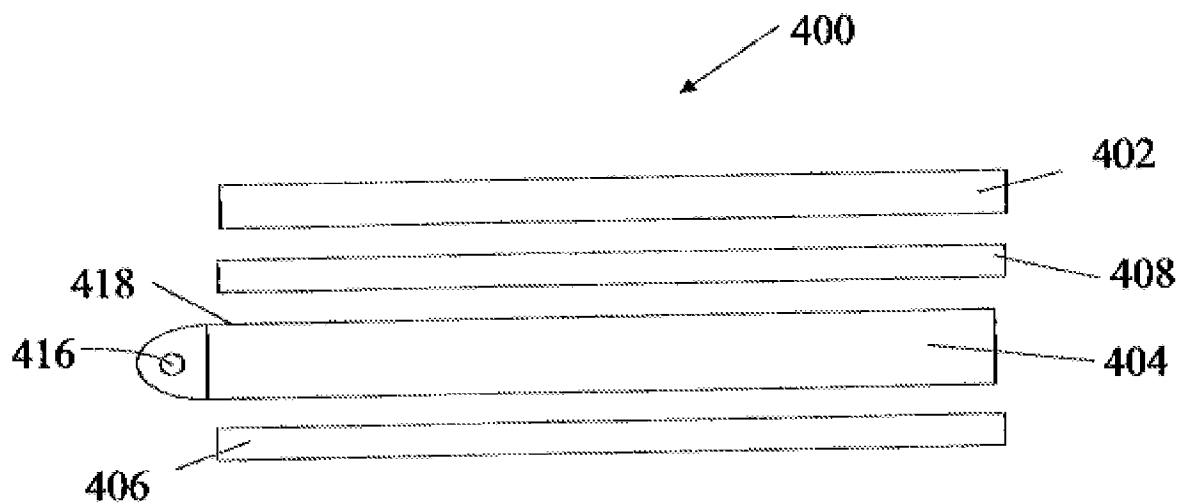


Fig. 4

Applicant's performance limitations wherein the polarizing element (A) has a distortion rate with respect to emitting light to incident light in the normal direction of 0.5 or more and a distortion rate with respect to emitting light to incident light at an angle inclined from the normal direction by 60 degrees or more of 0.2 or less, the polarizing element (A) has a function increasing a linearly polarized light component of emitting light as incidence angle is larger are characteristic of a broad band cholesteric polarizers like those of Bowley. Clearly a broad band cholesteric polarizer of reasonable quality will perform as claimed. Also, applicant has not applied 112 sixth paragraph, so the limitations are considered met due to the lack of enabling structure.

Bowley does not explicitly disclose a device with a linearly polarized light reflection polarizer (B) and transmitting linearly polarized light with one polarization axis

Art Unit: 2871

and selectively reflecting linearly polarized light with the other polarization axis perpendicular to the one polarization axis,

Winker discloses [col. 7, lines 47-57] a linear reflective polarizer in conjunction with a zero to half-wave retarder to serve as a tunable mirror for high brightness display.

Winker is evidence that ordinary workers in the art would find a reason, suggestion or motivation to add a linear reflective polarizer in conjunction with a zero to half-wave retarder to serve as a tunable mirror for high brightness display.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device with a linear reflective polarizer in conjunction with a zero to half-wave retarder to serve as a tunable mirror for high brightness display.

Any limitations as to capabilities and performance that are considered enabled by the structure would be obvious to one of ordinary skill in the art in light of said structure.

For example, if the claimed structure is capable of performance wherein a polarization axis of the linearly polarized light of emitting light is substantially perpendicular or substantially parallel to the normal direction of a surface of the polarizing element, it would be obvious to one of ordinary skill in the art in light of the structure.

Bowley et al [Bowley] USPGPUB 2003/0063245 in view of Winker et al [Winker] USPAT 6,710,831, as combined above, render obvious:

2. The optical element according to claim 1, wherein, in the polarizing element (A), the linearly polarized light component of emitting light increasing as incidence angle increases has a polarization axis of linearly polarized light substantially perpendicular to the normal direction of a surface of the polarizing element [obvious performance not enabled by structural limitations].

3. The optical element according to claim 1, wherein, in the polarizing element (A), the linearly polarized light component of emitting light increasing as incidence angle increases has a polarization axis of linearly polarized light substantially parallel to the normal direction of a surface of the polarizing element [obvious performance not enabled by structural limitations].

4. The optical element according to claim 1, wherein the polarizing element (A) substantially reflects a non-transmission component of incident light [obvious performance not enabled by structural limitations].

5. The optical element according to claim 1, wherein a thickness of the polarizing element (A) is 2 .mu.m or more [obvious dimension typical of current display devices, Bowley [0083] 5 to 10 microns].

6. The optical element according to claim 1, wherein a reflection band width of the polarizing element (A) is 200 nm or more [obvious/common to function within the visible light band per examples of Bowley].

7. The optical element according to claim 1, wherein the linearly polarized light reflection polarizer (B) is a grid type polarizer [obvious polarizer type will know as suitable in the art, MPEP 2144.07].

8. The optical element according to claim 1, wherein the linearly polarized light reflection polarizer (B) is a multilayer thin film laminate with two or more layers made of two or more kinds of materials having a difference between refractive indices [obvious polarizer type will know as suitable in the art, MPEP 2144.07].

9. The optical element according to claim 8, wherein the thin multilayer laminate is a vapor-deposited thin film [obvious polarizer type will know as suitable in the art, MPEP 2144.07, Bowley teaches most all types are suitable [0044]].

10. The optical element according to claim 1, wherein the linearly polarized light reflection polarizer (B) is a multi-birefringence layer thin film laminate with two or more layers made of two or more kinds of materials each having a birefringence [obvious polarizer type will know as suitable in the art, MPEP 2144.07, Bowley teaches most all types are suitable [0044]].

11. The optical element according to claim 10, wherein the thin multilayer laminate is a stretched resin laminate with two or more layers containing two or more kinds of resins each having a birefringence [obvious polarizer type will know as suitable in the art, MPEP 2144.07, Bowley teaches most all types are suitable [0044]].

12. An optical element comprising a $1/2$ wavelength plate (C) sandwiched between the polarizing element (A) and the linearly polarized light reflection polarizer (B) in the optical element according to claim 1 [per Winker as combined above].

13. The optical element according to claim 12, wherein the $1/2$ wavelength plate (C) is a broad band wavelength plate working as an almost $1/2$ wavelength plate over the entire visible light band [per Winker as combined above].

14. The optical element according to claim 13, wherein the $1/2$ wavelength plate (C) has a front retardation values, which is expressed by $(n_x - n_y) \times d$, in the range of a $1/2$ wavelength. $\pm 10\%$ at wavelengths in the light source wavelength band (ranging from 420 to 650 nm), where a direction in which an in-plane refractive index is maximized is defined as X axis and a direction perpendicular to the X axis is defined as Y axis, where refractive indices in each axis directions are defined as n_x and n_y , respectively, and a thickness is defined as d (nm) light [obvious performance not enabled by structural limitations].

15. The optical element according to claim 12, wherein the 1/2 wavelength plate (C) controls a retardation in the thickness direction and reduces a change in retardation caused by a change in angle light [obvious performance not enabled by structural limitations].

16. The optical element according to claim 15, wherein the 1/2 wavelength plate (C) has an N_z coefficient, which is expressed by $N_z = (n_x - n_z) / (n_x - n_y)$, in a relation of $-2.5 < N_z \leq 1$, where a direction in which an in-plane refractive index is maximized is defined as X axis, a direction perpendicular to the X axis is defined as Y axis and a thickness direction of the film is defined as Z axis, where refractive indices in each axis directions are defined as n_x , n_y and n_z light [obvious performance not enabled by structural limitations]. Please note that Applicant merely claims an optical element [for what purpose?], so naturally one of ordinary skill in the art knows to set the parameters of an optical element to most any range of values as suitable for the intended purpose [MPEP 2144.07].

17. The optical element according to claim 1, wherein a polarizing plate is disposed outside of the linearly polarized light reflection polarizer (B) so that the polarized light transmission axis of the linearly polarized light reflection polarizer (B) and the polarization axis direction of the polarizing plate coincide with each other [obvious arrangement to guide light in the desired way, e.g., normally white vs normally black].

18. The optical element according to claim 1, wherein layers are laminated with a transparent adhesive or pressure sensitive adhesive [obvious configuration will know as suitable in the art, MPEP 2144.07, Bowley teaches most all types are suitable [0044]].

19. A light condensation backlight system, in which at least a light source is provided for the optical element according to claim 1 [per Bowley Figure 5].

20. The light condensation backlight system according to claim 19, comprising a primary light condensing wherein the condensing light is in the angular range of ± 60 degrees from the normal direction [very common in the art of backlights for displays in order to direct most of the light towards the viewer for sake of efficiency, MPEP 2144.07].

21. The light condensation backlight system according to claim 20, wherein the primary light condensing is a microprism sheet array [verb is a noun ?] disposed on the light source [very common in the art of backlights for displays (reference 3M products) in order to direct most of the light towards the viewer for sake of efficiency, MPEP 2144.07].

24. A light condensation backlight system, in which at least a light source is provided for the optical element according to claim 12 [very common in the art of

Art Unit: 2871

backlights for displays in order to direct most of the light towards the viewer for sake of efficiency, MPEP 2144.07].

25. The light condensation backlight system according to claim 24, comprising a primary light condensing wherein in condensing light is in the angular range of ± 60 degrees from the normal direction [very common in the art of backlights for displays in order to direct most of the light towards the viewer for sake of efficiency, MPEP 2144.07].

26. The light condensation backlight system according to claim 25, wherein the primary light condensing is a microprism sheet array [verb is a noun ?] disposed on the light source [very common in the art of backlights (reference 3M products) for displays in order to direct most of the light towards the viewer for sake of efficiency, MPEP 2144.07].

27. A light condensation backlight system, in which at least a light source is provided for the optical element according to claim 17.

28. The light condensation backlight system according to claim 27, comprising a primary light condensing wherein in condensing light is in the angular range of ± 60 degrees from the normal direction [very common in the art of backlights for displays in

Art Unit: 2871

order to direct most of the light towards the viewer for sake of efficiency, MPEP 2144.07].

29. The light condensation backlight system according to claim 28, wherein the primary light condensing is a microprism sheet array [verb is a noun ?] disposed on the light source [very common in the art of backlights for displays in order to direct most of the light towards the viewer for sake of efficiency, MPEP 2144.07].

30. A liquid crystal display, in which at least a liquid crystal cell is provided for the light condensation backlight system according to claim 28 [per Bowley].

2. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowley in view of Winker as applied to claim 30 above, and further in view of Sahouani et al [Sahouani] USPGPUB 2003/0184862.

31. Bowley in view of Winker, as combined above, teach the device according to claim 3.

They do not explicitly disclose a device comprising a diffusing plate neither backscattering nor depolarizing laminated on the viewing side of the liquid crystal cell.

Sahouani teaches the use of a diffusing plate neither backscattering nor depolarizing [polarization maintaining [0053]] laminated on the viewing side of the liquid crystal cell to provide desired effects.

Sahouani is evidence that ordinary workers in the art would find a reason, suggestion or motivation to add a diffusing plate neither backscattering nor depolarizing [polarization maintaining [0053]] laminated on the viewing side of the liquid crystal cell to provide desired effects.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device with a diffusing plate neither backscattering nor depolarizing [polarization maintaining [0053]] laminated on the viewing side of the liquid crystal cell to provide desired effects.

Response to Arguments

Applicant's arguments filed on 19 August 2009 have been fully considered but they are not persuasive.

Applicant's ONLY substantive arguments are as follows:

(1) Regarding independent claim 1, APA does not teach claimed limitations as to capabilities and performance.

(2) Dependent claims are allowable because they directly or indirectly depend from an allowable base claim.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that the applied prior art is considered to meet all of Applicant's structural limitations per rejections above. Capabilities and performance must stem from the claimed structure.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., difference in order of lamination of the cholesteric liquid crystal layer or the difference in manufacturing method - see Applicant's arguments, middle of page 9.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(2) It is respectfully pointed out that in so far as Applicant has not argued rejection(s) of the limitations of dependent claim(s), Applicant has acquiesced said rejection(s).

Any references cited but not applied are relevant to the instant Application.

Conclusion

Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2871

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY RUDE whose telephone number is (571)272-2301. The examiner can normally be reached on Increased Flex Time Program.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nelms C. David can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TIMOTHY RUDE/
Primary Examiner, Art Unit 2871